TO:

ENGINEERING BULLETIN

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: MATERIALS METHOD 20

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APPROVED: Harry H. McLean

Harry H. McLean, Director, Materials Bureau

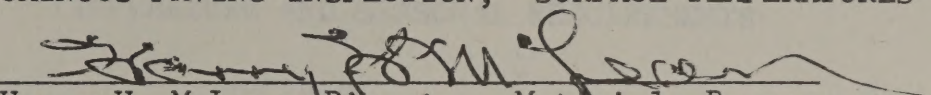
This Engineering Bulletin Expires upon receipt

Attached is revised Materials Method 20 titled BITUMINOUS PAVING INSPECTION, "SURFACE TEMPERATURES". It supersedes MM20 dated 7/20/66. Discard your 7/20/66 text and replace it with the attached.

Materials Method No. 20 (MAP Code 7.42-1-20)

Issue Date 5/15/74 Supersedes MM20 dated 7/20/66

TITLED - BITUMINOUS PAVING INSPECTION, "SURFACE TEMPERATURES"

ISSUED BY - 

Harry H. McLean, Director, Materials Bureau

I. SCOPE

This method describes specific procedures for determination of the temperature of the surface upon which bituminous material is to be placed. Proper use of this data in the control of paving operations is also described.

II. GENERAL METHOD

Prior to placement, but not necessarily plant production, the surface temperature of the base shall be determined at three places at approximately 25 foot intervals. These three readings shall be averaged to determine the final controlling temperature. In most cases, the temperatures shall be initially determined in the area where paving is to commence. No attempt shall be made to artifically shade the surface from the sun prior to temperature determination. However, should the Engineer observe substantial shaded areas within the immediate paving area, temperatures shall be measured in that shade. Should surface temperatures be determined to be below the required minimums listed in Table 401-2, Temperature and Seasonal Requirements (listed below), placement shall not be started until that temperature has been reached. Material in delivery vehicles which falls below its specified temperature, or becomes unworkable in the interim, shall be rejected.

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TABLE 401-2

TEMPERATURE AND SEASONAL REQUIREMENTS

Nominal Compacted Lift Thickness	Surface Temperature Minimum (Note 1)	Seasonal Limits
3" or greater	40° F	None
Greater than 1" but less than 3"	45° F	(Notes 2, 3 & 4)
1" or less	50° F	(Notes 2, 3 & 4)

Notes:

1. All temperatures shall be measured on the surface where the paving is to be placed and the controlling temperature shall be the average of three temperature readings taken at locations ± 25 feet apart in accordance with Department written instructions.

2. Top course shall be placed only during the period of April 1 to November 15 in the counties of Dutchess, Orange, Rockland, Putnam, Westchester, Nassau, Suffolk, and the City of New York.

3. Top course shall be placed only during the period of May 1 to October 15 in all counties except as noted in Note 2.

4. The requirements of Notes 2 and 3 above may be waived by written approval of the D.C.E.C. upon recommendation of the Regional Director.

   Once placement has commenced, periodic temperature checks shall be made during the course of the day's run. Frequency of such checks will depend upon the time of the year and general weather conditions. Should the surface temperature fall below the minimum temperatures, the Project Engineer shall notify the Plant Inspector to discontinue production for use on the project in question. However, deliveries already in transit at that time may be placed.

III. TEST PROCEDURE

Place a spirit thermometer on the surface so that its metal tip has reasonably good contact with the ground. Immediately place a dry, flexible insulating material over the thermometer and weigh it down so as to provide as tight a cover as possible. The upper portion of the glass end of the thermometer may be left exposed to facilitate reading. It is very important that the insulator be completely dry as the presence of water would lead to measurement of the insulator temperature rather than the surface temperature. NO READING OF THE THERMOMETER SHOULD BE CONSIDERED VALID UNTIL AT LEAST TEN (10) MINUTES HAVE ELAPSED SINCE PLACING IT IN POSITION.

When more than one thermometer is available, the thermometers should be checked occasionally by comparing readings under identical conditions. If, after a ten minute stabilization period they differ by more than a total of 2°F from each other, steps should be taken to check further and replace the inaccurate one.

IV. INTERPRETATION OF READINGS

Since the accuracy of the thermometers themselves is $\pm$ 2°F actual readings of 1° or 2° below the required minimums may be interpreted and recorded as in conformance with the minimum temperatures.

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